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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/073,063	02/12/2002	Olev Trass	228-082/HRH	2398
1059	7590	06/29/2006		
BERESKIN AND PARR 40 KING STREET WEST BOX 401 TORONTO, ON M5H 3Y2 CANADA			EXAMINER TOOMER, CEPHIA D	
			ART UNIT	PAPER NUMBER
			1714	

DATE MAILED: 06/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/073,063	<b>Applicant(s)</b> TRASS ET AL.	
	<b>Examiner</b> Cephia D. Toomer	<b>Art Unit</b> 1714	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 05 April 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 4,6-14 and 17-34 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 4,6-14 and 17-34 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

### **DETAILED ACTION**

This Office action is in response to the remarks filed April 5, 2005.

#### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 4, 6, 7-14, 27, 28 and 30-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bland (US 6,517,631) in view of WO0132324 with Furuya (US 6,520,099).

Bland teaches a method of generating a combustion ash composition comprising mixing ash and 10 to about 40% by weight of ash of water and reducing the average pore volume of the ash composition (see abstract; claim 1; col. 4, lines 28-31). Bland teaches that additives may be added to the combustion ash and water to strengthen the ash composition. Such additives include Portland cement, self-cementing ashes and lime (drying agents) (see col. 8, lines 10-13; col. 15, lines 39-48). The ash composition is agglomerated or pelletized. Bland teaches that the mixture is agglomerated to meet the ASTM specification for aggregates or those of a particular market. This suggests that the pelletized or agglomerated material may be prepared as a hardened material or crumbly, depending on the market for the material (see col. 8, lines 26-30).

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Bland teaches that the ash (2000 grams) and water (200 to 800 grams) are mixed in a Hobart mixer or pug mill (having positive transport capacity) at high energy ((see col. 10, lines 20-37). Bland teaches that this high energy mixing reduces the pore volume of the ash. The ash material may be combined with coarse wood chips and sawdust (see col. 17, lines 16-26; col. 18, lines 1-22). Bland teaches that the final product is used in road base, for use in concrete having structural masonry and insulation application and for use in lightweight aggregate applications. Bland teaches the limitations of the claims other than the differences that are discussed below.

In the first aspect, Bland differs from the claims in that he does not specifically teach feeding the mixture to a combustor. However, WO teaches this difference.

WO teaches treating coal ash with water to form reactivated ash that is fed to a combustor (see abstract). WO also teaches that the material also can be used in construction material. It would have been obvious to one of ordinary skill in the art to use the reactivated ash of Bland in a combustor because WO teaches that such materials have dual functions as building materials and as combustion material.

In the second aspect, Bland differs from the claims in that he does not specifically teach that the ash and water are ground. However, because Bland teaches that the mixers reduce the pore volume of the ash, this teaching suggests that the ash is ground to a smaller particle size.

3. Claims 17-26 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ehrlich (US 4,411,879).

Ehrlich teaches a method for enhancing the sulfur capture potential of lime in the fluidized bed combustion of coal (see abstract and claim 1). The method comprises mixing partially sulfated limestone from the bed combustor with crushed wet coal (see col. 2, lines 34-40). The partially sulfated limestone is in the fly ash of the flue gas (see col. 2, lines 46-52). If the coal is not wet enough to hydrate the limestone/ash/coal mix then additional water may be added (see col. 4, lines 44-48). Furthermore, Ehrlich teaches to have excess water in the process is not a problem (see col. 3, lines 58-63).

To effect the hydration reaction, the coal and fly ash are mixed at a temperature from about 200 °F to about 400 °F. This may be accomplished without the necessity of an additional heating means since the fly ash will be warm as it is collected from the flue gas (see col. 2, lines 51-60). Ehrlich also teaches that the dust cake (ash and coal fines) may be mixed with dry crushed coal (drying agent) and fed into the fluidized bed combustor (see col. 3, lines 3-23). Ehrlich teaches the limitations of the claims other than the differences that are discussed below.

In the first aspect, Ehrlich fails to teach grinding of the mixture of ash and wet coal. However, since Ehrlich teaches thoroughly mixing the coal and the mixture is used in the same process these teachings suggests that the mixing done by Ehrlich is sufficient to grind the mixture to the proper consistency, absent evidence to the contrary.

In the second aspect, Ehrlich differs from the claims in that he does not specifically teach the amount of water. However, it would have been obvious to one ordinary skill in the art to optimize this result effective variable because Ehrlich teaches

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that the amount of water may vary from a stoichiometric amount required to rehydrate the ash to an excess amount.

In the third aspect, Ehrlich differs from the claims in that he does not specifically teach that the mixing is carried out in a mill having positive transport capacity.

However, it appears that the mixer of Ehrlich teaches that the ash/coal mixture exits the mixer through line 20 and is fed to the combustor (see col. 4, lines 45-48). This teaching suggests positive transport.

In the fourth aspect, Ehrlich differs from the claims in that he fails to teach that the water/ash/coal mixture is pelletized. However, no unobviousness is seen in this difference because the skilled artisan desiring to use the sorbent mixture at a later date or time would pelletize the mixture to ensure ease of handling and for storage purposes.

4. Applicant's arguments have been fully considered but they are not persuasive.

Applicant argues that Ehrlich involves a completely different process from that set forth in claim 29, i.e., without additional heat and the process of grinding wet fine coal.

Ehrlich teaches at col. 1, lines 51-60, that "the crushed wet coal is dried by mixing with flyash which contains calcium oxide." When calcium oxide and wet coal are in contact with, an exothermic reaction occurs which allows the resulting mixture to be "warm, dry and free-flowing." Therefore, Ehrlich does not apply additional heat to the process.

With respect to Applicant's argument regarding the lack of a grinding step, the examiner maintains that by mixing the coal and flyash that the particle is reduced and

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the coal hydrates the flyash. Furthermore, Ehrlich teaches that the coal is crushed before it is combined with the flyash. Furthermore, the selection of any order of performing process steps in prima facie obvious in the absence of new or unexpected results. In re Gibson, 5USPQ 230 (CCPA 1930). Both Applicant and Ehrlich produce hydrated flyash.

Applicant argues that the examiner's use of the term consistency is inappropriate as it relates to Ehrlich.

The examiner respectfully disagrees. In this instance the term consistency refers to texture of the mixture. The wet coal and ash when mixed form a free flowing mixture. Therefore, the consistency of the mixture is not a paste but free flowing. Furthermore, the Examiner's choice of a term to describe the coal/ash mixture is irrelevant since the sole purpose of the grinding/mixing is to hydrate the ash. Ehrlich clearly obtains this goal.

Applicant argues that Ehrlich fails to teach that the mill of his invention has positive transport capacity.

The examiner respectfully disagrees. The mixture of Ehrlich exits the mill with some degree of force otherwise it would remain in the mill.

Applicant argues that Ehrlich fails to teach pelletization of the ash/coal mixture. Applicant argues that there is nothing in Ehrlich nor in the art generally that would say that materials to be used at a later date are necessarily pelletized, as opposed to being stored in whatever form results from the preparation of the mixture.

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The examiner maintains that the form of the coal/ash mixture is a matter of choice that a person of ordinary skill in the art would have found obvious absent persuasive evidence that the particular form of the mixture was significant.

Applicant argues that there is nothing in the teaching of WO (Furuya) which would be applicable to the teaching of Bland.

Bland teaches that the coal combustion/ash composition of his invention may be used in concrete having structural masonry and insulation applications. WO (Furuya) teaches that his coal combustion/ash composition, which is prepared in a manner similar to that of Bland, may be used in construction materials and building materials or as a desulfurizing agent in coal combustion boilers. Therefore, since WO is teaching the same or very similar product as Bland and WO teaches that its products may be used in the same environment as the products of Bland or in combustion boilers, it would have been obvious to one of ordinary skill in the art having Bland and WO before him/her to recognize that the coal/combustion ash composition may be fed to a combustor.

Applicant argues that by Bland reducing the pore volume of the ash that this teaching does not necessarily mean that the particle packing density has changed. Applicant further argues that there is no correlation between Applicant's grinding step and the fact that Bland teaches high energy mixing.

Whether Bland reduces the space between the particles or the volume within the particles it is irrelevant. Bland teaches high energy mixing and this teaching does suggest that the particles will be reduced. Furthermore, where the general conditions of



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a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable parameters by routine experimentation.

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

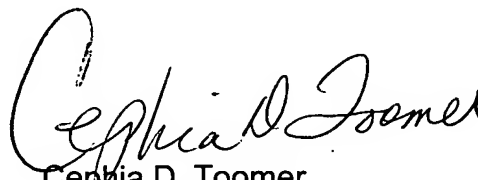
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cephia D. Toomer whose telephone number is 571-272-1126. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A handwritten signature in black ink, reading "Cepha D. Toomer". The signature is fluid and cursive, with the first name "Cepha" being more prominent.

Cepha D. Toomer  
Primary Examiner  
Art Unit 1714

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